AIRCRAFT GENERAL KNOWLEDGE

1. An aircraft that has been overstressed...

must be inspected by a qualified engineer before the next flight.

must be inspected by the pilot in command and if no defect is found, he / she will not be required to make an appropriate entry in the aircraft technical log.

must be inspected by at least two pilots licenced on the type, one of whom must be the pilot in command.

must be subjected to a duplicate inspected by two engineers before the next flight.

2. Aircraft maintenance carried out that does not concur with the maintenance schedule quoted in the certificate of airworthiness (C of A), will...

not affect the validity of the C of A.

require a C of A renewal after the required maintenance has been completed and before the aeroplane is flown again.

invalidate the C of A until the required maintenance is completed.

invalidate the previous certificate of release to service as the maintenance schedule will not have complied with it.

3. What is the maximum permissible reduction of RPM per magneto during the pre-flight magneto check?

500 rpm

1500 rpm

300 rpm

According to the flight manual

4. Electrical fuel pumps shall be switched on...

for take-off and landing.

for take-off.

in case of a malfunction of the mechanical pump.

according to the flight manual.

5. The airspeed indicator of an aircraft has become unserviceable. The aircraft may only be operated when...

the pilot has sufficient practice in judging airspeed.

the airspeed indicator has been repaired.

the airspeed information is transmitted by radio communication.

flying in the traffic pattern only.

6. What kind of damage will always cause an aircraft to lose its airworthiness? Damage to...

the skin.

the paint.

the canopy.

any supporting parts.

7. Who has to certify the mass and balance report that can be found in the operations manual (OM)?

The manager of a maintenance company

The Federal Aviation Authority

Any competent person

A certified aviation maintenance company

8. The thickness of the wing is defined as the distance between the lower and the upper side of the wing at the...

thickest part of the wing.

thinnest part of the wing.

most outer part of the wing.

most inner part of the wing.

9. How is referred to a tubular steel construction with a non self-supporting skin?

Grid construction

Half-shell construction

Shell construction

Honeycomb structure

10. A construction made of frames and straps with a supporting skin is called...

Grid construction.

Wood- or mixed construction.

Honeycomb structure.

Monocoque- or semi-monocoque construction.

11. What are the major components of an aircraft's tail?

Steering wheel and pedals

Ailerons and elevator

Rudder and ailerons

Elevator and rudder

12. The sandwich structure consists of two...

thin layers and a light core material.

thick layers and a light core material.

thin layers and a heavy core material.

thick layers and a heavy core material.

13. Which constructional elements give the wing its profile shape?

Spar

Rips

Planking

Tip

14. The load factor "n" describes the relationship between...

lift and weight.

thrust and drag.

weight and thrust.

drag and lift.

15. What is the maximum speed for flight maneuvers with full rudder deflection?

Vne, maximum permissible speed

Vb, maximum speed for strong wind gusts

Vfe, maximum speed with fully deployed flaps

Va, maneuvering speed

16. The fuselage components of wooden and metal aircraft are...

planking, the frame and longitudinal straps.

ribs, the frame and the covering.

the covering, spars and formed parts.

longitudinal supports, ribs and spars.

17. Which of the stated materials shows the highest strength?

Wood

Aluminium

Carbon fiber

Magnesium

18. Why should a pre-flight outside check include a visual inspection of the aircraft from a distance of at least 15 ft?

Foreign objects lying around are best recognized from this distance

The correct tyre pressure is best recognized from this distance

Deformations of the fuselage are best recognized from this distance

This is not necessary, because all important check points are listed in the flight manual anyway

19. A pilot enters a mountainous area at a high cruising speed and expects severe turbulence. What is his proper reaction?

No need for any special actions, because in this case an aircraft has to be loaded up to only 70% of its maximum weight

Airspeed must be reduced to the maneuvering speed according to the flight manual

Airspeed may not exceed the yellow arc on the speed indicator

Maintain control with minimum use of rudder

20. A flight control surface that is aerodynamically balanced...

uses a balance weight aft of the hinge line.

has been modified with a trim tab.

uses a balance weight forward of the hinge line.

has a part of the control surface forward of the hinge line.

21. What kind of hydraulic oil is used in aeroplane systems today?

Mineral oil

Synthetic oil

Vegetable oil

Bio-oil

22. Where is the brake system installed to slow the aircraft on ground?

Only on the nose gear

Only on the main gear

On the tail wheel

On the nose and main gear

23. When shall the operational reliability of the brake system be checked?

During the outside check (walk around)

Never, because the aircraft mechanic is responsible for any technical inspections and checks

Best during roll out after landing

During the taxi

24. What kind of control surface is connected with the nose wheel?

Aileron

Rudder

Elevator

Trim rudder

25. Tyre creep may be monitored by...

stretch marks on the tyre wall and possible tyre deflation.

two diametrically opposed yellow arrows painted on the tyre side wall.

alignment marks painted on and across the tyre wall and wheel flange.

position and condition of the inflation valve.

26. About how many axes does an aircraft move and how are these axes called?

3; vertical axis, lateral axis, longitudinal axis

3; x-axis, y-axis, z-axis

4; vertical axis, lateral axis, longitudinal axis, axis of speed

4; optical axis, imaginary axis, sagged axis, axis of evil

27. A movement around the longitudinal axis is primarily initiated by the...

ailerons.

rudder.

elevator.

trim tab.

28. How are the flight controls on a small single-engine piston aircraft normally controlled and actuated?

Manually through rods and control cables

Power-assisted through hydraulic pumps or electric motors

Hydraulically through hydraulic pumps and actuators

Electrically through fly-by-wire

29. Control inputs are transmitted to the control surfaces of fixed-wing aircraft below 2000 kg (4410 lbs)...

pneumatically. mechanically by cables,

wire ropes or control rods.

hydraulically by high pressure pipes.

electronically.

30. The rudder control lock on the control yoke should be set...

after starting the engine.

after takeoff

for outside parking.

during pre-flight checks.

31. What is the purpose of primary flight controls?

Primary flight controls are used by the pilot for the immediate control of pitch, roll and yaw of an Aircraft

Primary flight controls are used by the pilot to control all movements of an aircraft during all phases of flight

Primary flight controls improve the aircraft's handling characteristics and relieve the pilot from excessive control forces

Primary flight controls are needed to control the aircraft's horizontal and vertical flight path, its forward speed, and overall performance

32. What is the effect of pulling the control yoke or stick backwards?

The aircraft's tail will produce an increased downward force, causing the aircraft's nose to rise

The aircraft's tail will produce an increased downward force, causing the aircraft's nose to drop

The aircraft's tail will produce an increased upward force, causing the aircraft's nose to rise

The aircraft's tail will produce an decreased upward force, causing the aircraft's nose to drop

33. Which of the following options states all primary flight controls of an aircraft?

Elevator, rudder, aileron

Flaps, slats, speedbrakes

Elevator, rudder, aileron, trim tabs, high-lift wing devices, power controls

All movable parts on the aircraft which aid in controlling the aircraft

34. What is the purpose of the secondary flight controls?

To improve the performance characteristics of an aircraft and relieve the pilot of excessive control forces

To enable the pilot to control the aircraft's movements about its three axes

To improve the turn characteristics of an aircraft in the low speed regime during approach and landing

To constitute a backup system for the primary flight controls

35. The trim wheel or lever in the cockpit is moved forward by the pilot. What effect does this action have on the trim tab and on the elevator?

The trim tab moves up, the elevator moves down

The trim tab moves up, the elevator moves up

The trim tab moves down, the elevator moves down

The trim tab moves down, the elevator moves up

36. When trimming an aircraft nose up, in which direction does the trim tab move?

It moves up

It moves down

Depends on CG position

In direction of rudder deflection

37. Trimming an aircraft nose up, in which direction does the trim tab move?

Down

Up

Either down or up, depending on weather the elevator is producing an upward or a downward force

The trim tab always moves in the direction of the rudder deflection

38. What is the purpose of the electrical pitot heat?

To avoid icing of the pitot tube

To avoid icing of the aneroid barometer

To avoid icing of the membrane within the speed indicator

To balance the temperature and density with increasing altitude

39. What has to be considered during refueling?

Apply ground wires, turn on the main switch and magneto ignition

No open fires, obey smoking ban and apply ground cables

Refuel through a soaked rag and keep a fire extinguisher available

Check the fuel content of the tank with a torch and remove fire protection

40. What is the purpose of the tank ventilation?

To prevent underpressure caused by fuel consumption

To prevent fuel spillage during refueling on the filler plug

To prevent water disposal during parking

To distribute the fuel from one tank segment to the other during flight

41. In a fuel pump system, what has to be considered, in accordance with the respective manual, before switching to another tank?

Shut off ignition

Switch on carburettor heating

Switch on fuel pump

Switch on primer

42. When a fuel priming pump is used before starting an engine, the fuel is normally delivered directly to...

the induction manifold or inlet valve port.

the combustion chamber.

the delivery shroud of the fuel injector manifold.

the carburettor float chamber.

43. What is the function of an idle cut-off valve in a piston engined aeroplane?

It controls engine slow-running via the carburettor idle jet

It changes fuel flow to the main jet from the idle jet when power is increased

It inhibits the fuel flow from a discharge nozzle in the carburettor when selected

It shuts down the engine automatically if the cylinder head temperature rises due to long periods at idle on the ground

44. The mixture control regulates...

the fuel flow.

the air supply.

the fuel tank content.

the butterfly valve (throttle valve).

45. How can the best mixture setting according to the flight manual be reached?

By adding more fuel with the throttle

By adding more air with the mixture control

By reducing air with the mixture control

By reducing fuel flow with the mixture control

46. When shall a fuel inspection (draining) be conducted?

After landing, in order to remove condensation or contamination

After every refueling and before the first flight of the day

During every inspection

At latest during the pre-flight inspection before the first take-off, prior to engine start or taxi

47. The voltmeter provides an indication of...

the electric potential difference in a system in Volt [V].

the electric current in a system in Ampére [A].

the system voltage in Ampére [A].

the electric current in a system in Volt [V].

48. What is the unit for voltage?

Ohm

Volt

Ampere

Watt

49. Two 12 volt 40 ampere-hour capacity batteries connected in series would result in a total capacity of...

40 ampere-hours at 24 volts.

80 ampere-hours at 12 volts.

20 ampere-hours at 24 volts.

40 ampere-hours at 12 volts.

50. What are the consequences when the battery master switch is accidentally switched off during flight?

The ignition is interrupted and an engine with a magneto ignition will stop

Engine operation (with a magneto ignition) will not be influenced

The operational conditions of the radio equipment will not be influenced

The engine will experience a slight loss of power

51. Can electrically operated flaps be deployed when the generator has failed?

No, under no circumstances

Only if the magnetos produce sufficient power

Yes, if the battery is charged

Only if the master switch is turned off

52. What is the reason for static dischargers on aircraft?

To discharge static charging during flight

To eliminate electrical interferences during intensive radio traffic

To ensure grounding during refueling

To improve the quality of radio transmission in high altitudes

53. What is the most likely reason for the starter not turning when activated?

The generator is damaged

The magnetos are damaged

The magnetos are not switched on

The master switch is not turned on

54.Which flight instrument (depending on construction) can be supplied by the onboard power supply?

Altimeter

Magnetic compass

Airspeed indicator

Horizontal situation indicator

55. Electrically driven flight instruments are marked with...

"DC".

"EL".

"CO".

"AL".

56. Which cylinder arragement is commonly used on small aircrafts and motor gliders?

In-line engine

Radial engine

Horizontally opposed engine

V-type engine

57. The crankshaft in a four stroke piston engine...

controls the clearance of the valves.

converts linear motion into reciprocating movement.

converts rotary motion into reciprocating movement.

converts a reciprocating movement into rotary motion.

58. Which type of piston engine is most commonly used for low and medium power?

Diesel engine

Two-stroke engine

Four-stroke engine

Rotary engine

59. What is likely to be the cause if the engine runs unusually rough while checking the magnetos?

Starter is faulty

Short circuit on the ground cable

Sparking plug is defective

Ignition switch is faulty

60. The compression ratio of a piston engine is defined as the ratio of...

cylinder volume when the piston is at bottom dead centre (BDC) to the total cylinder volume.

cylinder volume with the piston at bottom dead centre (BDC) to cylinder volume with the piston at top dead centre (TDC).

total cylinder volume to the volume remaining above the piston when it is at top dead centre (TDC).

total cylinder volume to the volume remaining below the piston when it is at top dead centre (TDC).

61. What type of cylinder arrangement is usually used in engines for light aircraft?

A straight engine with hanging cylinders

A flat engine with opposing cylinders

A radial engine

A hanging or standing V-motor

62. What is the correct sequence of the piston movement in a four-stroke engine?

Intake - ignition - flush - exhaust

Injection - ignition - compression - exhaust

Intake - injection - ignition - exhaust

Intake - compression - ignition - exhaust

63. What is the purpose of the cylinder fins of a combustion engine?

Stiffening of the cylinder wall

Cylinder cooling (heat dissipation)

Protecting the cylinder wall from damages

Mass reduction

64. Where does the condensation water converge in the tank?

At the lowest position

It floats on the fuel

It is mixed with the fuel

Near the cap of the tank

65. When should the "drain" procedure be carried out?

Once a week

Before each flight

Before the first flight of each day

Before each landing

66. The highest absorbtion of humidity in fuel can be observed in which situation?

Almost full tanks

Almost empty tanks

During parking on wet gras areas

During parking on cold aprons

67. What does the octane rating or fuel grade describe?

Anti-knock rating

Flame front speed

Combustion temperature

Ignition timing

68. Which colour does Avgas 100 LL have?

Green

Red

Yellow

Blue

69. What is the major task of a carburettor?

To produce an ignitable air/fuel mixture

To provide additional fuel to cool the engine

To pump fuel from the tanks into the cylinder

To control the aircraft's speed through the throttle valve

70. A carburettor engine continues to run in idle with the butterfly (throttle) valve closed, because...

the carburettor has an independent idle run system.

the throttle can never be totally closed.the

pilot has to adjust idle with the thrust lever.

an automatic injection system is provided for idle.

71. A result of carburettor icing is...

a reduction of engine power.

an increase of engine power.

a dropping oil pressure.

a rising oil pressure.

72. Which actions shall be taken if the carburettor temperature gauge migrates into the yellow range?

Find cooler air layers

Lean the mixture

Enrich the mixture

Use the carburettor heat

73. In which phase of flight must the carburettor heating be switched off although carburettor icing might be expected?

During taxi

During climb

During cruise

During take-off

74. Under what circumstances is carburettor icing most likely to be expected?

During night flights

During high pressure weather situations in winter

With a wrong mixture setting

In high humidity and temperatures between -5°C and +20°C

75. What is the task of cooling fins on air-cooled engine cylinders?

Leading the airflow to parts designated to be cooled

Quick heat transfer to the surrounding air flow by expanding the surface

Cooling of the cylinder surrounding airflow and forwarding to hotter engine parts

Increasing the airflow thus improving cooling of cylinder parts

76. Cylinder head temperature indication relates to...

the critical cylinder.

a random cylinder.

all Cylinders.

the average of all cylinders.

77. Aircraft engines are fitted with cowlings...

to protect persons in the vicinity of a running engine.

to contain damage in the event of an engine failure.

to ensure a smooth airflow meets the wing root leading edge at an optimal angle of attack.

to allow air to be ducted around the cylinder heads for cooling purposes and to reduce drag.

78. Deflector plates are attached to an engine so that they...

preferably do not cause a temperature drop.

automatically regulate the temperature.

produce ideal cooling for all cylinders.

cool the cylinders.

79. May fully synthetic oil in an engine be mixed with mineral oil?

No, under no circumstances

Yes, without any restrictions

According to the flight manual

After consulting with the aircraft or helicopter mechanic

80. Directly after engine start the oil pressure indication climbs beyond the green arc. This is an indication that...

the oil is better than necessary.

there is too much oil in the engine block.

the engine oil is too hot and developing bubbles.

the oil is still very cold (viscous).

81. What happens during oil filter clocking?

A bypass valve opens thus enabling the circulation to continue, debris will not be filtered

A bypass valve opens thus enabling the circulation to continue, debris will be filtered by an alternate filter

The oil circulation will end after 30 minutes so that a proper engine run will not be guaranteed

The oil circulation will end after 15 minutes so that a proper engine run will not be guaranteed

82. What are the correct measures, when the oil temperature reaches the red arc during climb?

Continue with reduced power

Continue with increased power

Stop climb until the oil temperature returns to normal

Continue with lean mixture

83. When a magneto is switched to OFF, the switch located in its primary circuit...

is closed and the high tension circuit is closed.

is opened, breaking circuit continuity.

is opened and the circuit is grounded.

is closed and the circuit is grounded.

84. Piston engines of aircraft, touring motor gliders and helicopters have...

two electrically coupled ignition systems.

two independent ignition systems.

one ignition system.

one or two ignition systems, depending on the type.

85. When the short circuit cable of the ignition system is broken, the engine...

will not start even with the ignition switch turned on.

runs roughly, since the spark plugs do not receive the full voltage.

continues to run.

runs roughly, because the correct ignition timing cannot be maintained.

86. What is the purpose the magneto check before switching the engine off?

That the pilot becomes more confident with the ignition

To check if the magnetos are still correctly connected

There is no special reason for the short magneto check

The magneto check is practiced during flight training only

87.How do you call fuel mixtures with a high amount of fuel?

Lean

Rich

Full

Empty

88. During acceleration at a constant power setting in an aircraft with a fixed pitch propeller, the engine RPM will...

remain unchanged.

increase.

decrease.

remain unchanged, but the propeller RPM will increase.

89. With increasing altitude the engine power of a carburettor engine decreases because the...

air temperature decreases.

air density decreases.

air humidity decreases.

atmospheric pressure decreases.

90. With increasing altitude, the power of a carburettor engine...

increases.

decreases.

remains constant.

first decreases, from 5000 ft on increases.

91. What causes a greater torque load?

A larger angle of incidence

A larger angle of attack

A higher engine power output

A lower engine power output

92. What is the direct result of a broken or congested cylinder fin of a piston engine?

ncrease in fuel consumption

Overheating of the cylinder

Increase in rpm

Increase in oil consumption

93. An engine "warm-up" is required with combustion engines because...

otherwise the fuel consumption would be too high in flight.

otherwise the oil film will be cut.

vibrations of a cold engine may damage the aircraft.

maximum power can only be reached at the correct operating temperature.

94. What happens when the maximum permissible engine speed (rpm) is exceeded?

The fuel supply will be interupted

The engine cowling will be torn away

The engine will be damaged, certain parts may even fail

Nothing happens if the rpm is not exceeded by more than 50% of the maximum permissible limit

95. Pre-ignition of the fuel-air mixture in a piston engine is usually associated with...

a designed interrupted ignition sequence during start-up when backfiring occurs.

rich mixtures and low cylinder head temperatures.

carbonised sparking plugs due to prolonged engine operation using overly rich mixtures.

weak mixtures and high cylinder head temperatures.

96. If the appropriate manual or checklist is not available to deal with an engine fire during flight, the pilot should...

make a mayday call, slip the aircraft to keep the fumes away from the cabin, then attempt to extinguish the fire.

close the throttle, turn the fuel off and close the cabin air intake.

close the throttle, switch off the ignition, then set up for a forced landing.

try and keep the engine running to suck the fire into the induction manifold.

97. High cylinder head temperatures can be reduced in flight by...

increasing power and airspeed to augment the cooling airflow around the engine.

closing the cowl flaps which will increase the cooling airflow over the engine.

enriching the fuel-air mixture to reduce combustion chamber temperature.

climbing into colder air thus augmenting the cooling airflow over the engine.

98. Why may some engine manufacturers recommend a full throttle power setting for climb?

Because those engines are highly heat-resistant

In order to gain altitude as quickly as possible

Because an interior cooling of the engine can be achieved with the extra fuel

Because an essentially larger power output can be achieved by the change in air-fuel mixture

99. What is the correct procedure during a climb when the cylinder head temperature indicator is close to the maximum limit?

No measures are necessary as the outside air temperature decreases with increasing altitude

Continue the climb with reduced speed to relieve the engine

Level off and continue in a horizontal flight

Continue the climb with a higher speed or level off and continue in horizontal flight

100. Engine power (rpm) shall be kept low directly after engine start, because...

vibrations may destroy the tilt lever.

the engine may get thermally overstressed.

efficient lubrication is not immediately available.

fuel consumption may be increased.

101. When shall the mixture be leaned?

At altitudes above 3000 ft MSL

At all altitudes with engine power below 75%

On long distances flights only

At altitudes above 5000 ft AGL

102. What could cause overheating of pistons, cylinders and valves?

Early ignition

Late ignition

Mixture too rich

Mixture too lean

103. Which of the following procedures will minimize noise after take-off?

Selecting max. pitch (variable pitch propeller) to gain altitude as quickly as possible

Flying at the best angle of glide and under consideration of a low power setting

Flying at the speed for best climb and avoiding turns during climb

Land as soon as possible

104. How shall approaches be conducted to minimize noise?

Power-on approach as long as possible, small flap setting and gear down

Power-off approach, flaps and gear up

Power setting as low as possible, flaps retracted and gear up as long as practical

Medium power setting for approach

105. A Bourdon tube is suitable for the measurement of...

temperature.

weight.

pressure.

speed.

106. In either a wet or a dry sump piston engine, the oil pressure sensor is located...

on the inlet side off the scavenge pump.

on the outlet side of the scavenge pump.

on the outlet side of the pressure pump.

on the inlet side of the pressure pump.

107. What may be the reason for a drop in oil pressure with a steady oil temperature?

Carburettor icing

Inadequate mixture (too lean)

RPM setting too high

False indication

108. Which value can be read on the manifold pressure indication when the engine is not running?

The remaining air pressure within the cylinders after the last ignition

Air pressure (overpressure of the charger chamber)

The ambient air pressure at the location of the aircraft

The pressure between butterfly valve and cylinder valves

109. When the engine is not running, the manifold pressure gauge indicates...

total pressure of the static and dynamic pressure.

differential pressure.

barometic pressure.

ram pressure.

110. The purpose of the exhaust gas temperature (EGT) indicator is to monitor...

fuel temperature.

mixture adjustment.

carburettor heating.

engine temperature.

111. What does the green arc on the cylinder head temperature (CHT) indicator scale stand for?

Danger temperature

Speed range for landing gear and speed brake operation

Normal operating temperatuure

Max. limits for speed, pressure and temperature

112. Which value can the pilot derive from the fuel flow gauge?

The volume of fuel used per time

The fuel pressure

The fuel quantity

The fuel temperature

113. The tachometer may be driven by...

a V-belt.

a flexible shaft.

a drive belt.

a drive shaft.

114. How does the dynamic pressure on the aircraft change if the airspeed is doubled? It is...

doubled.

unchanged.

quadrupled.

tripled.

115. The term "static pressure" is defined as pressure...

of undisturbed airflow.

inside the airplane cabin.

resulting from orderly flow of air particles.

sensed by the pitot tube.

116. Which of the mentioned cockpit instruments is connected to the pitot tube?

Airspeed indicator

Altimeter

Navigational computer

Vertical speed indicator

117. What does the dynamic pressure depend on?

Air density and airflow speed squared

Air pressure and air temperature

Lift- and drag coefficient

Air density and lift coefficient

118. The Pitot / static system is required to...

measure total and static air pressure.

prevent icing of the Pitot tube.

correct the reading of the airspeed indicator to zero when the aircraft is static on the ground.

prevent potential static buildup on the aircraft.

119. Which pressure is sensed by the Pitot tube?

Total air pressure

Static air pressure

Dynamic air pressure

Cabin air pressure

120. What instrument is connected with the Pitot tube?

Airspeed indicator

Altimeter

Turn coordinator

Vertical speed indicator

121. Which of the following instruments show wrong indications when the static pressure ports of the aircraft are blocked?

Altimeter, vertical speed indicator, airspeed indicator

Airspeed indicator, vertical speed indicator, turn & bank indicator

Altimeter, tachometer, gyrocompass

Variometer, turn & bank indicator, tachometer

122. The static ports of an airplane are blocked. Which instruments may show wrong indications?

Airspeed indicator, vertical ,speed indicator, slip indicator

Altimeter, slip indicator, direct-reading compass

Vertical speed indicator, altimeter, slip indicator

Altimeter, vertical speed indicator, airspeed indicator

123. The barometric altimeter is calibrated in accordance with...

the pressure flow of the isobars.

the standard atmosphere.

the pressure flow of the isohypses.

the present atmospheric pressure.

124. QFE is the...

barometric pressure adjusted to sea level, using the international standard atmosphere(ISA).

barometric pressure at a reference datum, typically the runway threshold of an airfield.

altitude above the reference pressure level 1013.25 hPa.

magnetic bearing to a station.

125. When do you have to set the scale of the altimeter?

Before every flight and during the flight

After every assembly of the glider

Before the first flight of a day

Before taking off into bad weather

126. Which is the purpose of the altimeter subscale?

To reference the altimeter reading to a predetermined level such as mean sea level, aerodrome level or pressure level 1013.25 hPa

To adjust the altimeter reading for non-standard temperatuure

To correct the altimeter reading for system errors

To set the reference level for the altitude decoder of the transponder

127. The altimeter scale of the barometric altimeter has to be set...

annually

monthly

before every flight and during a cross-country flight

before the beginning of any flight operation

128. The indication of the barometric altimeter is based on...

the preselected barometric pressure on the altimeter scale.

mean seal level (MSL).

the airfield elevation.

the respective height above ground.

129. In which unit is the QNH depicted?

hPa

Torr

FL

m

130. What difference in altitude is shown by an altimeter, if the reference pressure scale setting is changed from 1000 hPa to 1010 hPa?

80 m more than before

Values depending on QNH

Zero

80 m less than before

131. The altitemeter's reference scale is set to airfield pressure (QFE). What indication is shown during the flight?

Height above airfield

Airfield elevation

Pressure altitude

Altitude above MSL

132. A flight level is a...

pressure altitude.

true altitude.

density altitude.

altitude above ground.

133. During a flight in colder-than-ISA air the indicated altitude is...

higher than the true altitude.

lower than the true altitude.

eqal to the true altitude.

equal to the standard altitude.

134. During a flight in an air mass with a temperature equal to ISA, the indicated altitude is...

higher than the true altitude.

lower than the true altitude.

equal to the true altitude.

equal to the standard atmosphere.

135. If the QNH of the departure aerodrome is preselected in the barometric altimeter scale, the altimeter indication will be...

the airfield elevation above MSL.

0 ft GND.

no indication.

the pressure altitude.

136. Which instrument can be affected by the hysteresis error?

Vertical speed indicator

Tachometer

Altimeter

Direct reading compass

137. The measurement of altitude is based on the change of the...

total pressure.

static pressure.

dynamic pressure.

differential pressure.

138. A barometric altimeter always shows the altitude above...

ground.

elevation.

mean sea level.

a preselected reference level.

139. Which of the following options states the working principle of a vertical speed indicator?

Measuring the present static air pressure and comparing it to the static air pressure inside a reservoir

Total air pressure is measured and compared to static pressure

Static air pressure is measured and compared against a vacuum

Measuring the vertical acceleration through the displacement of a gimbal-mounted mass

140. A vertical speed indicator measures the difference between...

total pressure and static pressure.

dynamic pressure and total pressure.

instantaneous total pressure and previous total pressure.

instantaneous static pressure and previous static pressure.

141. Calibrated airspeed (CAS) equals...

indicated airspeed (IAS) corrected for instrument and position error.

true airspeed (TAS) corrected for wind.

equivalent airspeed (EAS) corrected for altitude.

ground speed (GS) corrected for instrument and position error.

142. At higher altitudes, true airspeed (TAS) tends to be higher than calibrated airspeed (CAS). A rough estimate of the TAS can be obtained by...

adding 2 % of the CAS for every 1000 ft altitude.

subtracting 2 % of the CAS for every 1000 ft altitude.

adding 10 % of the CAS for every 1000 ft altitude.

subtracting 10 % of the CAS for every 1000 m altitude.

143. Which answer explains the abbreviation "IAS"?

International Standard Atmosphere

Information Air Service

Indicated Air Speed

International Alphabet System

144. Which of the following states the working principle of an airspeed indicator?

Total air pressure is measured and compared against static air pressure.

Static air pressure is measured and compared against a vacuum.

Dynamic air pressure is measured by the Pitot tube and converted into a speed indication by the airspeed indicator

Total air pressure is measured by the static ports and converted into a speed indication by the airspeed indicator

145. The speed scale of an airspeed indicator is colour coded. The green band represents...

the landing gear retraction range (Vlo).

the flap extension range (Vfe).

the caution range (Vne).

the normal operating range (Vno).

146. The airspeed indicator is based on measuring...

the difference between total pressure and static pressure.

static pressure alone.

total pressure alone.

the weather vane.

147. What is the meaning of the white arc on the airspeed indicator?

Speed range for extended flaps

Speed range in smooth air

Speed range in bumpy air

Speed range not to exceed

148. The speed range which shall not be flown during turbulence is marked on the airspeed indicator with a…

green arc.

yellow arc.

white arc.

red arc.

149. Which answer describes the meaning of the red line of the airspeed indicator scale?

Maximum landing gear operating speed

Minimum speed brakes extended speed

Maximum (never-exceed) speed

Minimum speed for aerobatics

150. Equal magnetic poles...

attract each other.

repel each other.

do not show a reaction.

reverse the polarity.

151. Which answer defines the term "inclination"?

The angle between magnetic and true north

The angle between the longitudinal axis of the aircraft and true north

The angle between the magnetic field lines of the earth and the horizontal plane

The deviation caused by electrical interference

152. The earth's magnetic field is referenced to...

the magnetic north pole.

the geographic north pole.

the equator.

the prime meridian.

153. A magnetic compass is subject to which of the following errors?

Variation, deviation, turning and acceleration errors

Inclination and declination

Declination, conjugation, turning and acceleration errors

Gravity and magnetism

154. What is the purpose of the fluid in a compass?

Temperature compensation

Damping compass movements and achieving a smooth indication

Reduction of inclination

To improve compass display visibility

155. An aircraft in the northern hemisphere accelerates on a magnetic heading of 090°. The indication of the direct reading compass...

indicates a greater heading.

indicates a smaller heading.

remains constant.

indicates the opposite course.

156. An aircraft in the northern hemisphere accelerates on a magnetic heading of 270°. Which reaction do you expect from the the magnetic compass indication?

An indication of approximately 300°

An indication of approximately 240°

An indication of approximately 270°

An indication of approximately 090°

157. Which instruments are so-called gyro instruments?

Airspeed indicator, magnetic compass

Bank indicator, radio compass

Pitch indicator, radio compass

Turn and bank indicator, artificial horizon

158. The gyro of a heading indicator continuously precesses during flight operations and should be regularly re-aligned with the magnetic compass...

when the wings are level during accelerated flight or slowing down.

when the wings are level in straight and level constant speed flight.

during straight constant speed flight or constant speed climb or descent.

when the wings are level with all non-essential electrical loads switched off.

159. The apparent drift of a gyro equals...

15°/h x cos(longitude).

13°/h x sin(latitude).

13°/h x cos(longitude).

15°/h x sin(latitude).

160. A directional gyro or heading indicator is susceptible to apparent drift which is caused by...

rotor speed instability.

internal friction.

inherent rigidity in space.

Earth rotation about its own axis.

161. The bank angle of a 2-minutes circle depends on the...

IAS.

CAS.

TAS.

Ground speed.

162. A rate of turn indicator provides information regarding the movement around the...

vertical axis of the aircraft.

longitudinal axis of the aircraft.

lateral axis of the aircraft.

vertical and the longitudinal axis of the aircraft.

163. A turn and bank (or turn and slip) coordinator provides information regarding...

the rate of turn and coordination, i.e. slip or skid, of the turn.

the rate of turn and bank angle of the aircraft.

the coordination of the turn and slip angle.

the pitch and bank angle of the aircraft.

164. The direction and the rate at which the airplane is turning around its vertical axis is indicated by the...

artificial horizon.

turn and bank indicator.

vertical speed indicator.

directional gyro.

165. What is the time needed for a complete 360° turn with a rate of turn of 3 degrees?

3 min

2 min

12 s

4 min

166. What does the slip indicator show?

Apparent vertical

Vertical to horizon

Airplane's bank

Rate of turn

167. The artificial horizon belongs to the...

capsule instruments.

gyro instruments.

engine monitoring instruments.

electrical systems.

168. Which of the following instruments has its axis of rotation vertical to the earth's surface?

Turn & bank indicator

Compass

Directional gyro

Artificial horizon

169. The artificial horizon...

will not change its position and the indication accuracy remains constant.

is built as pendulum so that it is sensitive to tilting motion and can indicate this without delay.

is fully gimballed; indication errors may occur during longer or repeated turns.

is half gimballed, movable around all three axis and will retain its position in space as long as there is no tilting motion.

170. Gyros suffer from what kinds of errors?

Hysteresis error

Gimbal errors

Acceleration errors

Deviation

171. The standard directional gyro...

is generally reliable for bank and pitch angles less than 60°.

is not reliable during inverted flight.

is reliable only when maintaining the max. permissible speed.

is reliable in all flight attitudes.

172. A precession error can occur with...

a magnetic compass.

an artificial horizon.

a directional gyro.

a turn and bank indicator.

173. Which light colour advises the pilot to the condition "immediate corrective action is required"?

Red

Amber

Blue

Green

174. What does the abbreviation ADI stand for?

Attitude Director Indicator

Advanced Directional Indicator

Attitude Deviation Indication

Aircraft De-Icing

175. A horizontal situation indicator (HSI) combines the information provided by...

the directional gyro and the VHF navigation receiver.

the attitude indicator and the flight director.

the rate gyro and the slip indicator.

the directional gyro and the flight director.

176. The primary flight display (PFD) of an EFIS system may include which of the following information?

Attitude, heading, radial, track, approach course, flight director

Navigational information, heading and track, bearings, wind direction and speed.

Engine oil pressure and temperature, cylinder head temperature, exhaust gas temperature

ATC flight plan, active flight management system flight plan, communicatons

177. The navigation display (ND) of an EFIS system may include which of the following information?

Navigational information, heading and track, bearings, wind, position

Attitude, indicated airspeed (IAS), speed trend vector, altitude, vertical speed

Engine oil pressure and temperature, cylinder head temperature, exhaust gas temperature

ATC flight plan, communicatons with air traffic control (ATC)

178. In case of a leakage in the exhaust / air heat exchanger, allowing carbon monoxide to enter the aircraft cabin, it...

may be identified by its strong smell.

may be identified because of its grey colour.

can only be detected by acetate odour.

cannot be detected because it is odourless and colourless.